INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

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July 20, 2009

Mr. Bharat Mathur
Acting Regional Administrator
U.S. Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3950

Re: Technical Addendum for the Request for Redesignation and Maintenance Plan for Ozone Attainment in the 8-Hour Ozone Nonattainment Area for Lake and Porter Counties, Indiana

Dear Mr. Mathur:

The Indiana Department of Environmental Management (IDEM) has prepared this technical addendum to the Request for Redesignation and Maintenance Plan for Ozone Attainment in the 8-Hour Ozone Nonattainment Area for Lake and Porter Counties, Indiana (Redesignation Request and Maintenance Plan) to validate the original SIP quality Lake Michigan Air Directors Consortium (LADCO) Round 5 ozone modeling results for the Clean Air Interstate Rule (CAIR). The final Request for Redesignation and Maintenance Plan was submitted to the United States Environmental Protection Agency (U.S. EPA) on June 5, 2009.

On July 11, 2008, the U.S. Court of Appeals, for the District of Columbia Circuit, vacated U.S. EPA's CAIR in its entirety. Based on the implications of the court's ruling, LADCO in cooperation with IDEM has conducted SIP quality Round 5 ozone modeling to determine the air quality impacts associated with CAIR controls not being in place on Electrical Generating Units (EGUs) in the Midwest region. The 2009 modeled result confirms that all counties in the nonattainment area did attain the National Ambient Air Quality Standard (NAAQS) for ozone of 0.08 ppm by June 15, 2009 without CAIR. Table 1 shows the LADCO Round 5 non-CAIR ozone modeling results for the year 2018. These results further demonstrate that the area will maintain compliance with the 1997 ozone standard well into the future without CAIR in place.

On December 23, 2008, the D.C. Circuit Court remanded CAIR without vacatur, directing U.S. EPA to revise the CAIR rule in the future. The future version of CAIR (Replacement Rule) will result in similar or greater emission reductions than assumed within the emission inventories and modeling (based on what the rule would address in response to the court's opinion). U.S. EPA and LADCO modeling for future year design values with or without CAIR consistently show that existing and future improvements in air quality in the region due to declining emissions resulting from permanent and enforceable control measures will ensure continued compliance (maintenance) with the standard.

Table 1

LADCO's Round 5 Modeling Results for 2018								
				Scenario A	Scenario B	Scenario C	Scenario A - Scenario C	Scenario B - Scenario C
ST	Monitor	County	Site	FYDV	FYDV	FYDV	Difference	Difference
IN	180890022	Lake	Gary	73.0	72.5	72.3	0.7	0.2
IN	180890030	Lake	Whiting	74.8	74.3	74.2	0.6	0.1
IN	180892008	Lake	Hammond	73.3	72.7	72.6	0.7	0.1
IN	181270024	Porter	Ogden Dunes	72.8	72.3	72.1	0.7	0.2
IN	181270026	Porter	Valparaiso	70.5	69.8	69.7	0.8	0.1
IL	170310032	Cook	Cheltenham	70.0	69.5	69.4	0.6	0.1
IL	170314201	Cook	Northbrook	70.4	69.9	69.9	0.5	0
IL	170317002	Cook	Evanston	73.3	72.9	72.7	0.6	0.2
IL	170971007	Lake	Illinois Beach	72.2	71.8	71.7	0.5	0.1
WI	550290004	Door	Door Co.	76.5	75.6	75.5	1.0	0.1
WI	550590019	Kenosha	Chiwaukee	77.8	77.2	77.0	0.8	0.2
WI	550610002	Kewaunee	Kewaunee	71.4	70.7	70.5	0.9	0.2
WI	550710007	Manitowoc	Manitowoc	73.9	73.2	73.1	0.8	0.1
WI	550890009	Ozaukee	Harrington Beach	73.9	73.2	73.1	0.8	0.1
WI	551010017	Racine	Racine	72.8	72.3	72.1	0.7	0.2
WI	551170006	Sheboygan	Sheboygan	76.9	76.0	75.9	1.0	0.1

Scenario A: 2007 Continuous Emissions Monitor (CEM)-based emissions were projected for all states in the modeling domain based on Energy Information Administration (IEA) growth rates by state (North American Electric Reliability Council region) and fuel type. The assumed growth rates for the Midwest States were: MAIN (IL, IA, MO, WI): 8.8% (2007-2018); ECAR (IN, KY, MI, OH): 13.5% (2007-2018); and MAPP (MN): 15.1% (2007-2018). No control was applied. The annual emissions were temporalized based on profiles derived from 2004-2006 CEM data.

Scenario B: Scenario A emissions for the LADCO States and select neighboring states (e.g., MN, IA, MO, KY, TN, and WV) were adjusted by applying legally enforceable controls (i.e., emission reductions required by a Consent Decree, state rule, or permit). Only those legally enforceable controls identified (and justified) by the States were applied. The States also supplied the appropriate control factors.

Scenario C: For the years 2009 and 2012, Scenario A emissions for all states were adjusted by applying all planned SO2 and NOx controls based on the July 10 CAMD list (i.e., 90% reduction for scrubbers, 95% reduction for SCRs). Because the July 10 Clean Air Markets Division list only includes controls generally out to 2011, additional SO2 and NOx controls for the year 2018 were assumed for all Best Available Retrofit Technology-eligible EGUs in the five LADCO States plus MN, IA, MO, KY, TN, and MO (i.e., 90% reduction for scrubbers, 95% reduction for SCRs). All Scenario B controls were included in Scenario C.

These modeling results validate the original Redesignation Request and Maintenance Plan because the SIP quality modeling demonstrates that national and local emission control strategies phased-in or implemented by 2008-2009 are more than sufficient to ensure the area maintains compliance well into the future.

Enclosed for your information, please find a copy of LADCO's Regional Air Quality Analysis for Ozone, $PM_{2.5}$ and Regional Haze: Final Technical Support Document (Supplement), September 12, 2008.

Table 2 (to be considered an update to Table 4.1 on Page 19 of the Redesignation Request and Maintenance Plan) has been revised to back out any projected emissions reductions associated with CAIR EGU control measures. Table 2 clearly illustrates that regional VOC and NO_x emissions will continue to decline even without CAIR control measures in place.

Table 2

Comparison of 2006 Estimated and 2020 Projected Emission Estimates in Lake and Porter Counties, Indiana (tons per summer day)							
	2006	2020 with CAIR	Change with CAIR	Percent Change with CAIR	2020 with out CAIR	Change with out CAIR	Percent Change with out CAIR
NO_X	223.86	154.86	-69.00	-30.82	165.91	-57.09	-25.50%
VOC	83.57	69.42	-14.15	-16.93	69.93	-13.64	-16.32%

The transportation conformity budgets for the year 2020 contained within Section 5 of the Redesignation Request and Maintenance Plan includes a 5% margin of safety. For VOC, this represents a +.29 tons per summer day difference, and for NO_x, the difference is +.9 tons per summer day. Once these adjustments are applied to the 2020 total emissions data without CAIR, the 2020 total emission projections remain below the base year (2006) emissions for VOC and NO_x, which demonstrates that the transportation conformity budgets contained within Section 5 remain adequate to preserve maintenance.

The U.S. EPA NO_x SIP Call required twenty-two states to adopt rules that would result in significant emission reductions from large EGUs, industrial boilers, and cement kilns in the eastern United States. Indiana adopted this rule in 2001. The result is that significant reductions have occurred regionally and upwind within the Northwest Indiana nonattainment area because of the number of affected units within the region. Indiana's NO_x SIP Call rule will remain in effect regardless of the uncertainly of the CAIR replacement rule. Indiana's ozone season NO_x requirements for EGUs are outlined within 326 IAC 24-3-1. Indiana will only revise this portion of our CAIR rule should a CAIR replacement program alter the ozone season requirements at the federal level.

U.S. EPA and LADCO modeling for future year design values consistently show that for all of the monitors in Indiana, existing and future improvements in air quality in the region, due to declining emissions resulting from permanent and enforceable control measures, will ensure continued compliance (maintenance) with the standard. Furthermore, because this area is subject to significant transport of pollutants, significant regional NO_x and SO_2 reductions will ensure continued compliance (maintenance) with the standard with an increasing margin of safety. Therefore, the Northwest Indiana area is eligible to be classified consistent with other counties in the nation that measure air quality that meets the annual NAAQS for fine particles.

IDEM believes that this technical addendum in conjunction with the previously submitted Redesignation Request and Maintenance Plan satisfies Indiana's obligation under Section 172(c) of the Clean Air Act to demonstrate how the area attained, and will continue to attain, the NAAQS for 8-hour ozone by the attainment date.

Therefore, IDEM requests that U.S. EPA proceed with final review and approval of the Request for Redesignation and Maintenance Plan for Ozone Attainment in the 8-Hour Ozone Nonattainment Area for Lake and Porter Counties, Indiana. If you have any questions or need additional information, please feel free to contact me at (317) 232-8222 or Ms. Christine Pedersen, Section Chief at (317) 233-5684 or cpederse@idem.in.gov.

Sincerely,

Daniel Murray
Assistant Commissioner
Office of Air Quality

DM/sd/skr

Attachments
LADCO Regional Air Quality Analyses for Ozone, $PM_{2.5}$ and Regional Haze: Final Technical Support Document (Supplement), September 12, 2008

cc: Ed Doty, U.S. EPA Region 5
Steve Rosenthal, U.S. EPA Region 5
John Mooney, U.S. EPA Region 5
Cheryl Newton, U.S. EPA Region 5
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